

# Integrated Control Electronics for Adjustable X-Ray Optics

Completed Technology Project (2013 - 2016)



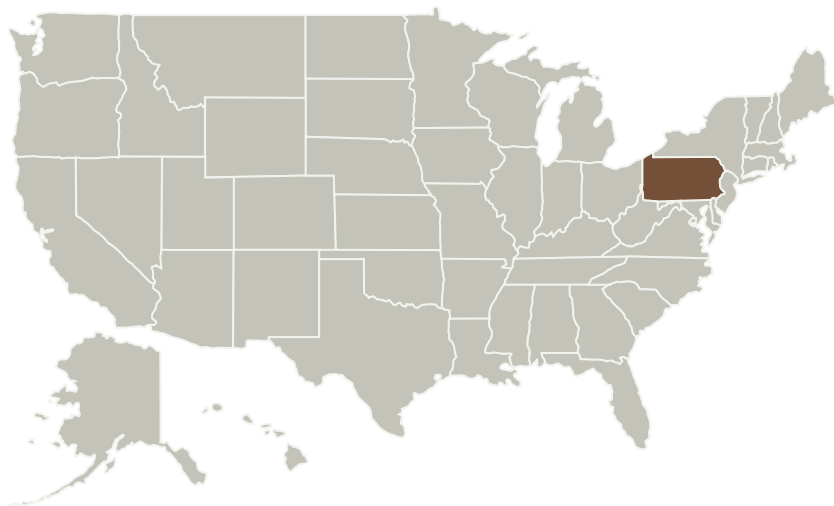
## Project Introduction

The goal of the proposed program is to enable increased angular resolution and collection areas for future major X-ray observatories by incorporating improved figure control of the mirror surfaces. Current X-ray telescopes are limited by inabilities to prepare perfect surfaces. This project will utilize thin film electro-mechanical actuators that allow the mirror surfaces to be adjusted after fabrication. In addition, we will incorporate electronics directly on the actuator to simplify control of individual cells and increase system fault tolerance. This will significantly reduce system complexity and greatly enhance the feasibility of adjustable X-ray optics.

## Anticipated Benefits

The goal of the proposed program is to enable increased angular resolution and collection areas for future major X-ray observatories by incorporating improved figure control of the mirror surfaces.

## Primary U.S. Work Locations and Key Partners



### Primary U.S. Work Locations

Pennsylvania



Project Image Integrated Control Electronics for Adjustable X-Ray Optics

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## Organizational Responsibility

### Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

### Responsible Program:

Space Technology Research Grants

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## Images



**11958-1363022096596.jpg**

Project Image Integrated Control  
Electronics for Adjustable X-Ray  
Optics

(<https://techport.nasa.gov/image/1686>)

## Project Website:

<https://www.nasa.gov/directorates/spacetech/home/index.html>

## Project Management

### Program Director:

Claudia M Meyer

### Program Manager:

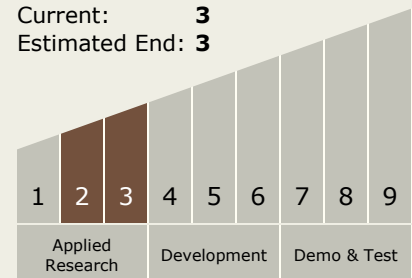
Hung D Nguyen

### Principal Investigator:

Susan Troler-mckinstry

## Technology Maturity (TRL)

Start: **2**  
Current: **3**  
Estimated End: **3**



## Technology Areas

### Primary:

- TX08 Sensors and Instruments
  - └ TX08.2 Observatories
    - └ TX08.2.1 Mirror Systems